SUBSTITUTE SPECIFICATION (marked-up version)

~~Description~~

Full-color Organic Display with Color Filter Technology and Suitable White Emissive Material and Applications Thereof

BACKGROUND

The invention relates to a full-color organic illuminated display (organic light emitting diode display, abbreviated as "OLED display") with improved color stability, particularly an illuminated display in which the colors are generated by color filters, which are arranged before an emitter. In addition, the invention relates to the use of such OLED displays, for example, in the field of communication, automotive sector, consumer electronics, business, medical technology, industrial electronics, or household appliances.

OLEDs are known, for example, for the generation of full-color displays, which are constructed as follows: An emissive layer is applied to an ITO (indium tin oxide)-coated substrate, ~~often to an additional~~ on a planarizing and/or hole-transporting intermediate layer. The emissive layer can be structured either as pixels (individual points) ~~and~~ that consist of various emissive materials (typically red, green, and blue) or of a uniformly emissive material, whereby the individual color pixels are created by upstream color filters (color filter technology). In order to achieve hereby a predefined color (e.g., the white point) on the display, the subpixels of the individual colors are driven with a certain current ratio, which depends on the emissive material and color filters.

All colors that a human being can perceive are defined, for example, by an area on the so-called CIE diagram. Within this area, segments or subsets can be delimited, which localize the colors sufficient for creating a full-color display. This subset in each case comprises the so-called white point at which the number and intensity of the specific subpixels are selected in such a way that the color white is emitted.

In order to achieve a white emission in organic light-emitting diodes, for example, in current full-color displays with structured emissive layers, the subpixels, red, green, and blue, are driven with a intensity ratio of 1.2 (red) to 1 (green) to 1.8 (blue). In other